

IN THE CLAIMS

1. (Currently Amended) A method for processing data comprising:

storing a data item receiving data at a cache server, the data item being accessed by a data request from a remote computer, the data item stored at the cache server being based on underlying content maintained at a data source, the data request including a uniform resource locator associated with the data item;

receiving at a data center manager a data change message from a trigger associated with ~~a~~ with the data source, the data change message generated in response to a change in the underlying content at the data source for ~~content of~~ the data item;

generating an expiration command at the data center manager in response to the data change message;

receiving the expiration command at the cache server from the data center manager; and

marking the data item at the cache server as expired according to the expiration command.

2. (Currently Amended) The method for processing data according to Claim 1 further comprising:

receiving a data request at the cache server from a remote computer, the data request requesting the data item data from the cache server;

determining whether the ~~requested~~ data item is available at the cache server;

retrieving the ~~requested~~ data item from an origin server when the ~~requested~~ data item is unavailable at the cache server, the origin server retrieving the underlying content from the data source to produce the data item; and

communicating the ~~requested~~ data item from the cache server to the remote computer.

3. (Currently Amended) The method for processing data according to Claim 2 wherein the data item comprises a web page and further comprising generating the web page ~~at an~~ at the origin server.

4. (Original) The method for processing data according to Claim 3, wherein generating the web page comprises generating the web page based on the data request.

5. (Currently Amended) The method for processing data according to Claim 2, wherein determining whether the ~~requested~~ data item is available comprises:

determining whether the ~~requested~~ data item is present at the cache server; and

determining whether the ~~requested~~ data item is current when the ~~requested~~ data item is present at the cache server.

6. (Currently Amended) The method for processing data according to Claim 2, wherein retrieving the ~~requested~~ data item comprises controlling, ~~by the~~ by a flow control server, retrieval by the cache server of the ~~requested~~ data item from the origin server.

7. (Currently Amended) The method for processing data according to Claim 6, wherein controlling retrieval comprises:

determining at the flow control server a current load associated with the origin server;

prioritizing at the flow control server the ~~requested~~ data item; and

determining when the cache server retrieves the ~~requested~~ data item based on the current load of the origin server and the priority of the ~~requested~~ data item.

8. (Currently Amended) The method for processing data according to Claim 7, wherein determining ~~whether to grant permission~~ when the cache server retrieves the data item comprises:

granting permission to the cache server when the current load of the origin server is below a predetermined threshold; and

denying permission to the cache server when the current load of the origin server exceeds the predetermined threshold.

9. (Canceled).

10. (Previously Presented) The method for processing data according to Claim 1 further comprising generating the expiration command at the data center manager in response to the elapsing of a predetermined period of time.

11. (Currently Amended) The method for processing data according to Claim 1, wherein generating the expiration command comprises:

detecting a change in the underlying content at the data source ~~data associated with the origin server~~ by a trigger associated with the data underlying content;

generating a ~~data change command~~ the data change message indicating at least one ~~changed item of~~ change in the underlying content; and

communicating the data change ~~command~~ message to the data center manager.

12. (Currently Amended) The method for processing data according to Claim 1, wherein marking the data as expired comprises receiving the expiration command from the data center manager and determining the data item to expire as a function of the expiration command.

13. (Original) The method for processing data according to Claim 12, wherein the expiration command expires a single web page.

14. (Original) The method for processing data according to Claim 12, wherein the expiration command expires a plurality of web pages.

15. (Original) The method for processing data according to Claim 12, wherein the expiration command expires a plurality of web pages at a plurality of web sites.

16. (Original) The method for processing data according to Claim 12, wherein the expiration command expires a plurality of web pages at a plurality of domains.

17. (Canceled).

18. (Currently Amended) The method for processing data according to Claim 1, wherein the data item comprises a web page using the hypertext markup language.

19. (Original) The method for processing data according to Claim 1, wherein the expiration command comprises an Internet Cache Synchronization Protocol command.

20. (Previously Presented) The method for processing data according to Claim 19, wherein the expiration command comprises an Internet Cache Synchronization Protocol terse command and further including generating the expiration command at the data center manager in response to an Internet Cache Synchronization Protocol verbose command.

21. (Currently Amended) The method for processing data according to Claim 1, wherein the data item has an associated request element identifying the data item, the request element having a first portion and a second portion distinct from the first portion and wherein ~~receiving data~~ the data item is accessed data at the cache server ~~comprises~~ by:

filtering the first portion of the request element based on predetermined criteria associated with an origin server associated with the data item; and

identifying the data item based on the second portion of the request element.

22. (Currently Amended) The method for processing data according to Claim 21 further comprising:

receiving a data request at the cache server, a first portion of the data request being distinct from the first portion of the request element and a second portion of the data request being substantially similar to the second portion of the request element; and

retrieving the data item as a function of the second portion of the data request and the second portion of the request element.

23. (Currently Amended) The method for processing data according to Claim 22, wherein the request element comprises a uniform resource locator and the data request comprises a uniform resource locator.

24. (Currently Amended) A method for providing efficient data access service comprising:

subscribing an origin server to a data center;

routing a data request from a browser to the data center, the data request requesting a dynamic content item and having an associated address indicating the origin server, the data request including a uniform resource locator associated with the data item;

receiving at a data center manager, before expiration of the dynamic content item, a data change message from a trigger at a data source associated with the dynamic content item, the data change message generated in response to a change in the underlying content of the for the dynamic content item maintained at the data source;

generating an expiration command at the data center manager in response to the data change message;

receiving the expiration command from the data center manager;

updating an expiration time of the dynamic content item in accordance with the expiration command;

determining whether the dynamic content item is available at the data center according to the expiration time of the dynamic content item;

generating the dynamic content item at the origin server from the underlying content at the data source when the dynamic content item is unavailable at the data center;

retrieving the dynamic content item from the origin server when the dynamic content item is unavailable at the data center; and

communicating the dynamic content item to the browser.



25. (Original) The method for providing efficient data access service according to Claim 24, wherein subscribing the origin server comprises transferring domain name resolution service to the data center and wherein routing the data request comprises resolving the address associated with the origin server.

26. (Currently Amended) The method for providing efficient data access service according to Claim 24, wherein determining whether the dynamic content item is available comprises:

determining whether the dynamic content item is present at the data center; and

determining whether the dynamic content item is current when the dynamic content item is present at the data center.

27. (Currently Amended) A system for processing data comprising:

a data center operable to receive a request from a client;

a data source operable to maintain underlying content for data items cached at the data center; and

a data center manager coupled ~~to a~~ to the data source and the data center, the data source operable to generate a data change message in response to a change in the underlying content of data associated with maintained at the data source for a particular data item cached at the data center, the particular data item being accessed by a data request from a remote computer, the data request including a uniform resource locator associated with the particular data item, and the data center manager operable to receive the data change message and generate an expiration message in response to the data change message indicating an expiration of the particular data item, the data center manager operable to send the expiration message to ~~a cache server~~ the data center.

28. (Original) The system for processing data according to Claim 27, wherein the data center comprises a web server, a cache server and a flow control server.

29. (Currently Amended) The system for processing data according to Claim 28, wherein the web server is operable to receive the request from the client, wherein the cache server is operable to ~~store data received from the origin server~~ cache data items, and wherein the flow control server is operable to prioritize the request and control access to an origin server and the data source for the cache server for retrieval of data items not cached at the cache server.